

ABSTRACT OF THE DISCLOSURE

[00100] Non-stoichiometric substances with unusual properties are described. Methods for preparing biomedical, electronic, optical, thermal, structural, energy, magnetic, electrical, inks, coatings, and electrochemical products from nanomaterials are discussed. The nanoscale materials taught comprise one or more elements from the group actinium, aluminum, antimony, arsenic, barium, beryllium, bismuth, cadmium, calcium, cerium, cesium, chalcogenide, cobalt, copper, dysprosium, erbium, europium, gadolinium, gallium, gold, hafnium, hydrogen, indium, iridium, iron, lanthanum, lithium, magnesium, manganese, mendelevium, mercury, molybdenum, neodymium, neptunium, nickel, niobium, nitrogen, oxygen, osmium, palladium, platinum, potassium, praseodymium, promethium, protactinium, rhenium, rubidium, scandium, silver, sodium, strontium, tantalum, terbium, thallium, thorium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.